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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/882,523	06/15/2001	Marek Minarik	MLD-044	9938
3897	7590	09/09/2004	EXAMINER	
SCHNECK & SCHNECK P.O. BOX 2-E SAN JOSE, CA 95109-0005			CHOI, LING SIU	
			ART UNIT	PAPER NUMBER
			1713	

DATE MAILED: 09/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/882,523	Applicant(s) MINARIK ET AL.	
	Examiner Ling-Siu Choi	Art Unit 1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on 21 June 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☐ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

1. This Office Action is in response to the Response filed June 21, 2004. Rejection of claims 1-17 under 35 U.S.C. 102(b) as being anticipated by Barry et al. [Journal of Chromatography A, 732, 159-166(1996)], Zhu et al. (US 5,089,111), or Madabhushi et al. (US 5,567,292) are maintained.

### ***Claim Rejections - 35 USC § 102***

2. **The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:**

**A person shall be entitled to a patent unless --**

**(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.**

3. Claims 1-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Barry et al. [Journal of Chromatography A, 732, 159-166(1996)], Zhu et al. (US 5,089,111), or Madabhushi et al. (US 5,567,292).

The present invention relates to a method for electrophoretic separation of a mixture of oligonucleotide fragments having different lengths between 0 and 100 bases, comprising

(a)	filling a microchannel with a separation media comprising <b>non-entangled pyvinylpyrrolidone</b>
(b)	injecting the mixture of oligonucleotide fragments into a first end of the microchannel
(c)	applying an electrophoretic current sufficient to cause the oligonucleotide fragments to migrate through the separation media
(d)	detecting separated oligonucleotide fragments at an end removed from the injection end

(summary of claim 1)

The rejection is adequately set forth in paragraph 3 of the previous Office Action and is incorporated herein by reference.

#### ***Response to the Amendment***

4. Applicant's Response filed on June 21, 2004 has been fully considered but it is not persuasive.

The patentability of the present invention depends on the whether the prior arts teach or fairly suggest the use of non-entangled polyvinylpyrrolidone. Other issues such as the step of loading capillary using gas pressure (claim 4) or the step of repeating injection and separation (claim 8) are obvious to one of ordinary skill in the art at the time the invention was made. Thus, the response to the amendment will be focused on the key issue: whether the prior arts teach or fairly suggest the use of non-entangled polyvinylpyrrolidone.

Based on the following statements: "For 40,000 molecular weight PVP, the entanglement threshold is 11.4%....this threshold will be a lower percentage in the media for higher molecular weight polymers...." and "The Barry et al. reference...the disclosed separation requires using 1,000,000 molecular weight PVP at a concentration of 14% (w/v)", a conclusion was then drawn by the Applicants that "the threshold cutoff concentration for a lower weight PVP (40,000) is 11.4%. The higher molecular weight PVP used in the cited reference at a higher concentration would be entangled." However, the entanglement threshold also depends on properties of solvent other than the concentration. The given conclusion is not necessarily correct. The same argument will also applied to case related to the disclosure of Zhu et al.. Furthermore, Zhu et al. disclose that capillary column containing a **gel free aqueous solution of a substantially linear polymer** which can be polyvinylpyrrolidone. With referring to "this rejection should be reconsidered because a method of using a non-entangled polyvinylpyrrolidone is not disclosed". Madabhushi et al. do disclose the method to use the non-entangled polyvinylpyrrolidone, wherein the polyvinylpyrrolidone adsorbed on the silica surface, which is not excluded from the present claims.

### ***Conclusion***

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 1713

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling-Siu Choi whose telephone number is 571-272-1098.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reach on 571-272-1114.

  
**LING-SUI-CHOI**  
**PRIMARY EXAMINER**

Ling -Siu Choi, Ph.D.

September 3, 2004